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THE SOUTHERN AGRICULTURIST,

FOR THE PROMOTION

OF

AGRICULTURE, HORTICULTURE, RURAL AND DOMESTIC ECONOMY

IN THE

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The Southern Agriculturist.

(NEW SERIES.)

Vol. VI. **FOR JULY, 1846.** **No. 7.**

Communicated for the Southern Agriculturist.

ADDRESS,

On the Anniversary of the Agricultural Society of St. Luke's Parish, delivered by William H. Wigg, Esq., Corresponding Secretary, at Bluffton, S. C., on the 13th May, 1846.

Mr. President, Ladies and Gentlemen:—

Up to a very recent date in the annals of agriculture, its pursuit, as a branch of science, was entirely unknown, and even now, so tardy and imperfect has been the progress of investigation, it may be said, with no better truth, that this, our cherished vocation, in comparison with its kindred branches of knowledge, like the moon, compared to the eternal orb of day, shines only by reflected light.

That this should be so, is a source scarcely more of regret than it is of astonishment, for the earth's culture, to some extent at least, has necessarily been an occupation of human life, in all the ages of the world, that have rolled by, since the fall of man, and at no time, since the invention of letters, has there been any dearth of agricultural writings. Moreover, some of the most illustrious names, recorded in history, are known to us in connection with the subject of agriculture; still, I hazard the declaration, *that we have no agricultural writings, either ancient or modern, which strictly speaking, may be termed scientific*, and that the world has never yet seen any system of cultivation, based upon *well defined, fixed* and *invariable principles.*

I have no wish to detract from the merit of any writer or system, either ancient or modern: on the contrary, I freely confess that much has been written which is valuable: that the practice of very many agriculturists, is not only commendable, but that it measurably rewards the labor expended, which is its end, and is highly worthy of imitation, yet, I unhesitatingly renew, the declaration I have just made, and appeal to your experience gentlemen, to sustain or otherwise, the corroborative assertion, that the cultivation of our chief staple, which is cotton, has in no degree been promoted, by any light, which scientific researches have cast upon it. The original method of cultivating cotton, has descended to the present day, with fewer variations in practice, perhaps, than was ever before known, in the same lapse of time, to have occurred, in the affairs of any other business of life. This, I take it, is positive evidence of

the existence of one of two facts: either that the art in the beginning, was conceived and practised in perfection, or, that it is at this day, in a lamentable state of backwardness. Either that the agricultural knowledge, at present prevailing, is consummate, or that we have no claim, whatever, to the title of enlightened and scientific husbandmen. Which horn of the dilema gentlemen, do you please to select? Let us briefly consider.

Are there any five planters out of the number by whom I have the honor of being at present surrounded, who plant their crops, (equality of soil understood) precisely in the same way? Whose beds and banks are of the same size and at the same distances? Whose ditches correspond in all respects? Who use the same quantity and quality of manure, applied in the same way? Who collect manure on the same plan and of the same materials? Who plough, list, bed, &c., in the same manner and at the same relative time? Who thin and lay by their crops: who pick and prepare it for market, and who, in short, from "seed time to harvest," as much on the same plan and *for the same reasons*, conduct their agricultural operations, as it is common to see several mechanics conducting their business—framing a house for instance, after the same fashion? Are there five such planters present? "I pause for a reply."—None!—so far from the possibility of finding five planters agreeing upon all points, I very much question, if it is possible to find *five points*, upon which there is universal agreement. Every planter has a budget of theories and a style of execution peculiar to himself, and to these he adheres with most distinguished pertinacity and independence. I will illustrate:

Here is one planter—he extols a high bed for cotton. He tells you that it keeps the roots dry in wet weather, and moist in dry weather—Satyr like, he blows hot and cold with the same mouth.

Here is another planter. He advocates a *low bed* (some prefer planting on the level.) He says cotton roots should always be kept as nearly as possible, at the same distances from the surface of the earth, and from light and heat.

Here is another planter. He contends for thin planting; he says cotton should always be allowed space, wherein to spread its branches and a free circulation of air, without which, the plant can neither mature or bear fruit in perfection. To this it is replied—the chief part of a crop of cotton, it is known, is usually gathered from the middle and upper branches of the stalk, on which parts the branches are always fewer and shorter than they are lower down,—hence, to ensure the possibility of a good harvest, it is necessary to leave the plants *thick*—trusting that the injury sustained by each individual plant, will be more than counterbalanced by the aggregate good resulting.

Here is another planter. He says, *plough deeply* and pulverize the soil thoroughly, which will enable the *tap-root*, to reach its proper distance from the surface, without doing which, the plant cannot mature and if perchance he is familiar with the opinion of

Jethro Tull, he will inform you that deep or subsoil ploughing, is equivalent to a good dressing of manure.

To this it is replied, that the *tap-root* should not be allowed to descend beyond a certain depth—at that point, if practicable, it would be well to place a hard-pine board to arrest its progress—if not arrested, the plant *runs to seed* and will cast its fruit.

Here is another planter. He is opposed to pasturing stock on fallow land. He says they destroy the deciduous growth, which, left upon the land, would fertilize and likewise serve to protect it from the scorching and exhausting rays of the sun in summer. He is met with the rebutting testimony of another planter, that stock return all to the soil ever taken from it, that they destroy injurious weeds and grasses, and that by constant trampling, they aid the land, when taken into cultivation to resist extremes both of wet and dry weather.

I might easily draw out this catalogue of conflicting opinions to an illimitable extent, but I have gone far enough, as I think, to establish the premises I have assumed, namely, that agriculture amongst us, is not conducted upon any *well-defined, thoroughly understood and universal principles.* That it cannot justly be considered a *scientific pursuit*, but on the contrary, its practice is *ill-defined, vague and uncertain:* every planter indulging in theories of his own and after his own peculiar conceptions—thus exhibiting (as a body of men engaged in the accomplishment of one and the same great end) opinions as hostile and diversified, as ever prevailed in the discordant councils of Pandemonium. This being so, two important questions present themselves for our consideration, to-wit:

Where is the error? and, What is the remedy?

The error, gentlemen, is a fundamental one, and is to be found in the absence of a systematic course of agricultural education. An agricultural education, co-incident to an education for the pulpit, the bar, or the practice of medicine, is a moral phenomenon upon which the sun has never yet beamed in South-Carolina. This cannot fail to excite your special wonder, when the vital importance of the political interests concerned—being no less than the political existence of the State—is taken into consideration with the fact, that a more intelligent, well educated and energetic body of men, than the planters of South-Carolina—and she affords, I take it, only a fair specimen of the whole body of Southern agriculturists—is no where to be found engaged in any other business of life, in any part of the world. Amongst the body of men, of whom I speak, the standard of education is as high in South-Carolina, as it is in any part of the world, and from the days of the Revolution to the present hour, her sons, drawn from that class, have not only been unsurpassed, but scarcely equalled in any field, on which they have contended for distinction; yet, although her very existence, as just asserted, depends upon the successful cultivation of her soil, strange to say, she has never digested or even attempted to digest, any scheme of agricultural education. Is such a scheme impracticable?

Is the business of agriculture a chance medley? Is it exempt from natural laws? I would insult your good sense and would impair my own reverence of the profound wisdom and foresight of Divine Providence, if I were to admit, even for the sake of argument, that the science of Agriculture, which is the key-stone of the arch, in the magnificent fabric of human aims and human hopes here on earth, is based upon principles less definite, and upon laws less exact, than those which prevail in the economy of geology, astronomy, anatomy, or any other branch of learning.

It is but as yesterday, in the revolution of time, when the assertion of the earth's orbital motion drew upon the head of Gallelio, the imputation of heresy and the direful anathema of the Church of Rome. To ignorance no less, but far less excusable now, do we leave it, to invoke the aid of incredulity in its denial of the wonderful order of God's providence, developed by the ingenuity of the human mind. But to return.

Here in South-Carolina, we have schools and colleges in abundance, of every name and of every denomination; and yet, the scientific teaching of agriculture as a branch of moral education, has never been introduced, but has been directly repudiated in her halls of legislation, and is at this day unsparingly denounced by those who should be amongst its foremost advocates. To avoid ambiguity—I mean to say, that a few years since, an attempt to establish a chair of agriculture in the South-Carolina College, failed, and since then the discussion, in most circles, seems to have settled down into a conviction of its inutility. Was not this an error?—such an error as "he who runs may read?" An error which was scarcely to have been expected on the part of our enlightened Legislators, here in the middle of the nineteenth century, when the prevailing characteristic of the times, would seem to have indicated the trial as an experiment, if for no other reason? And it might very much, I think, have been placed in the scale as a counterpoise to the more recent, and certainly not less doubtful experiment, of chartering manufacturing companies. But experience teaches that electoral bodies move and think slowly, therefore we may cherish the hope, that though postponed, the measure is not defeated, and when "all the weighty matters of the law" are adjusted, time perhaps will be found by the Legislature, for the consideration of a subject, which is at present thrown into the back ground, not so much on account of its conceded inutility, as for being of less distinguished importance, than the graduation of fee bills, and other such high concerns as relate to transactions within the palings of the Court-house yard. But to return from this digression, which the neglected interests of the planters have occasioned.

Do we not teach our beasts of burden to draw by the yoke and trace? Do we not teach our negroes certain occupations? Do we not teach our sons the practice of certain trades and professions? Yet, when we come to agriculture, how is it? Is no education necessary? Are men born agriculturists? Is plantation lore here-

ditary? Who dares avow the belief, that a correct knowledge of the art of planting, like a correct knowledge of medicine, is not to be acquired from books? Why is it that a man who can read, inevitably makes a better planter, than one who cannot?—a supposition which is doubtless correct. Is it, that a knowledge of the art of reading affords him an incidental and *scarcely noted* advantage in the means of acquiring professional information, which the one who cannot read, does not possess. His being so, it is easy to perceive, that, that advantage pushed to the extreme—the knowledge of the art of reading applied to correct and extensive reading—opens a door to its possessor, (beyond the threshold of which the other can never pass) that, through a long suit of gorgeously furnished apartments, leads at the last to the inmost chamber of the temple.

Here then, gentlemen, in defective education, or rather in no agricultural education at all, we have the great error, and this error, as I hope presently to shew to your satisfuction, is the secret source of many evils, which we are prone to attribute to causes that have no real existence.

Partly dependent upon this state of things, partly productive thereof and closely allied in every way with the deficiency of which I have been speaking, is the deficiency no less deplorable of proper agricultural books.

The practice of all trades and professions, is systematically taught from books—elementary or text books. These books are compiled with great care by learned men, from facts and data as well authenticated, as that three equal lines form a triangle, and 2 and 2 make 4. Is it so with any books on agriculture with which we are acquainted? Alas! no. Flooded as the world is with books upon that subject, I stand upon the declaration with which I commenced —that we have no written scientific system of agriculture—that is to say, we have no works which begin with the elucidation of general phytological phenomena; that treats of the sustenance of vegetable life upon those principles, and that connect therewith the concomitant sciences. For instance; until within a few years, the intimate connection existing between the science of agriculture and the science of chemistry, was not known. It was not known that a growing vegetable is capable of being reduced to a state of concretion. It was not known that each constituent part can be identified, separated, withdrawn, weighed and measured in exact proportions. It was not known that soils in like manner are subject to minute analysis and their co-relative adaptation to certain plants precisely established. It was not known that all useless or deleterious particles, contained in soils or prepared manures, can be detected, and corrective agents pointed out, produced and applied by the same means, yet all this is so, and in view of the wonderful revelations of agricultural chemistry, I cannot refrain from anticipating the advent of an era in the economy of agriculture, when the retort and crucible will be considered as far more essential to the operations of the cotton-planter, than the *hoe* is at this day, for verily, now, as in the time of the Prince of Denmark—

"There are more things in heaven and earth, Horatio,
"Than is dreamt of in your philosophy."

Again: there are no agricultural books of which I have any knowledge, that can of themselves enable the closest student to become a practical and a scientific agriculturist. Is the science of agriculture peculiar in this respect? He who has never seen the ocean, may learn from books to direct the way of a ship across its trackless bosom. He who has never seen a patient in sickness, may learn from books to mark the progress of disease and to arrest its career. He who has never seen a telescope, may learn from books to read the "stars, which are the poetry of heaven." Is not this so? Can the same in any degree be said of the science of agriculture? In medicine, or in law, if the practitioner happens to be at a loss, he has his ponderous tomes to refer to for information. To what book may the planter refer? The Cook's Oracle and Miss Leslie's Seventy-five Receipts contain more correct information upon the *tasteful* subject of which they treat, than can be gleaned on agriculture from all the books that have ever been written. Mistake not: I do not undervalue the literary labors of our agricultural brethren as inglorious theories; generally speaking, they will bear the test of criticism, but based upon *fancy* not *facts*—being *assumptions* not *demonstrations*—being the opinions of one set of writers, combating the opinions of another set—they are utterly unfit for any useful purpose of agricultural education.

It may be replied, that the progress of science is nothing more than the substantiation of theories—that all theories are useful for future investigation. Be it so, but I contend, that in the present state of agriculture, considered as a science, so little is perfectly known, that it is absolutely necessary to begin "de novo"—to strike out a new path—to lay a new foundation, broad and deep and long, upon which to erect a fabric by rule and plumet as perfect and as true in all its parts, as astromony and geology stand at this day, by the exact labors of Herschel and of Cuvier. No progress can ever be made in any science until the principles on which that science is founded, are first correctly established. Principles to a science is, what the skeleton is to the animal frame—the basis of its strength and its beauty, its permanency and its perfection. The magnet is the principle in navigation, which led Columbus to the shores of the New World. Without its aid, his keel never would have grated upon the sands of St. Salvador, and all his enraptured colloquies of the *Ultima Thule*, would have passed away "like the baseless fabric of a vision."

Unfortunately for the progress of the science of agriculture, experiments in husbandry, invariably require a heavy expenditure, both of time and money—greater than private individuals can generally afford to bestow—hence, an imperative reason exists, why the matter should be taken in hand by public bodies, and hence also, the deplorable error committed by our Legislature in neglecting to establish the Professorship just now referred to. To Agricultural

Societies, and to wise measures of legislation, together with the judicious expenditure of the people's money for the people's benefit, we must look for our deliverence from evils to which our profession is not justly amenable. If I may be excused in venturing an opinion, I would suggest to our Agricultural Societies, the propriety of moving in this matter and at once. An agricultural department should, as an imitatory step, be added to the Faculty of the South-Carolina College, with an experimental farm attached upon the most liberal scale. Such an institution, if conducted with only ordinary ability and success, reaching as it would do, to the very foundation of our political prosperity, and reforming that which is so evidently amiss, would confer a benefit to the State, which would be directly experienced by every individual within her limits. A taste for the profession of agriculture, would be inculcated simultaneously with a knowledge of its practice, and many young men, returning from College with these requisites about them, would enter upon the business of after life with a zeal, which is now too often wasted, for the want of better employment, in dissipation and folly. This subject I am happy to perceive, is awakening inquiry in several of our sister States. Before the New-York Legislature, at its last session, a scheme was presented for the establishment of an Agricultural College with experimental farms. May the scheme, worthy as it is of the empire State, succeed; and gentlemen, may the time soon arrive, when the experience and traditions of ignorant and superstitous negro drivers, shall cease to be, the purest and best fountain at which agricultural knowledge can be quaffed here in South-Carolina—to which end, I trust it will be made an important element in our future general elections. Far be it from me to raise my voice against the Legislature, and which has been meted to rail-roads and manufactures, against that bounty, which renovated the queen city of the South, like a Phœnix from her ashes; but "fiat justicia"—let even handed justice hold the scale. The planting interest of South-Carolina is the all-important, and it is the all-neglected interests of the State—an anomaly in political economy, better suited to the latitude of the sable Republic of Hayti, than it is to the meridian of South-Carolina.

Time does not permit me to dwell longer upon this subject, however much I may feel inclined to speculate thereon. With your permission therefore, I will proceed to consider some of the popular views taken of the agricultural depression, under which we evidently labor.

The first and principal of the causes, gentlemen, to which is usually attributed the prostration of the planting interest of the South, stands the Tariff laws of the United States. That it is an evil, and the prolific source of many evils, I shall not gainsay. Indeed, I would be recreant to the political faith of my youth, and I would appear an alien in your presence, if I was to relax my maledictions of the abominable Tariff, and with "curses, not loud, but deep," cease to characterize the nature and extent of its odious and unjust

exactions; but its discussion belongs not to this arena, and therefore I willingly dismiss it, with my congratulations to you on the death-blow it is likely to receive from the recently declared free trade policy of the British ministry.

The next cause in course, and in the scale of importance, is the alleged over-production of cotton.

So great does this evil appear in the sight of Mr. McDuffie, that he has declared, if he could increase threefold the quantity of cotton annually produced in South-Carolina, he would not do so. Now, with profound respect, for all the opinions which proceed from the patriotic and gigantic intellect that presides at Cherry Hill, I nevertheless believe, that there is far more plausibility than there is truth, in the effects attributed to this cause.

As the ocean can never contain too much water, until the land is submerged; in like manner, cotton can never be over-produced, as long as there is a single individual of the human species, who needs and cannot procure a supply equal to his wants. In viewing this matter correctly, we must not forget that in the gift of the cotton-plant to man, it was evidently the intention of God, to supply an article of raiment to all his creatures. This was his first great object; its use by individuals for the purposes of acquiring wealth, is altogether secondary and incidental. The gift is not an *end*, but a *mean* only, in the great circle of the designs of Providence.

Now let us see, how stands the proportion of production and consumption. By allowing on one hand, the moderate quantity of five pounds of the raw material to each inhabitant of the globe, as an annual supply, the amount required would be upwards of 5,000,000,000 of pounds. On the other hand, the greatest number of pounds ever yet produced in one year I think, was considerably less than one-fourth of that vast quantity; therefore, if my premises are correct, (and I think they are) it follows that no over-production of cotton really does exist, and that consequently, the evils flowing from that alleged source, must be referred to some other. May I presume, gentlemen, to point to that other?

When the gospel shall find free course throughout the world! When the sun of righteousness shall illuminate the dark corners of the earth! When the sword shall be turned into the ploughshare, and nations shall learn the art of war no more! When commerce, untrammelled by the mistaken policy of rulers, and by the avarice of bloated wealth, shall float as freely on the bosom of the ocean wave, as now "her own bubbles are borne onward"—then causes shall cease to operate, which now are working, not with the less force, for working secretly;—then (to which period the thick gathering shadows of coming events, indicate our rapid march,) peace, justice and good will to man, standing behind the throne, shall be greater than the powers which are seated upon the throne; and then, enlightened by the progressive developments of God's ulterior designs—the artifices of rapaciousness unmasked—we shall no more be deluded and duped by suppositions, causes and effects.

But having denied that over-production is a legitimate cause of agricultural depression, while I am unable to disprove the existence of a glut in the cotton markets, I will attempt to account for that glut, and to point out in what manner its injurious effects may be averted, no matter how arising.

Divested of all fictitious appearances, the depression of which I speak, and which is too onerously obvious not to be discernable, arises from the fact, that the art of producing has not kept pace with the art of manufacturing cotton; in other words, our present system of cultivation is so defective, that it is found impossible to grow cotton, as cheaply as it is to manufacture it. This disparity is created by the improvements in manufacturing machinery on the one hand, and by no commensurate increase of agricultural skill on the other. This, gentlemen, is the true cause—superinduced by the absence of science in agriculture—of all the evils under which agriculture suffers. Let us then, lend our energies to the advancement of agriculture as an exact science, and the lion will be bearded in his den. Increased production of cotton, without the increase of capital, cannot fail to increase consumption—the opinions of all the Savans of christendom to the contrary notwithstanding. I will illustrate my views. Suppose the cotton crop of the United States, without any increase of capital invested in agriculture, could be rendered double of what it is at present, and being thus doubled that its price fell off one half. What would be the result? The aggregate amount of money received for the crop would be unincreased. The planter's income would be unchanged, but in manufacturing capital and in the use of physical powers, twice the amount would be required for its consumption that is necessary at present; hence the amount of capital that is invested in our cotton fields, without being increased one cent, would set in motion a foreign capital just double of what is now employed. This, obviously, would reduce to one half the price of all cotton fabrics: this in return would enable all present consumers to consume just twice as much as at present, and it would enable many to become consumers, who cannot afford to purchase at current prices. What follows? The consumption of cotton fabrics by this operation would not only be doubled, but it would be increased beyond that point, exactly to the extent of the quantity consumed by the new purchasers, created by the fall in price, dependent upon increased production effected by our increased agricultural skill.

I will simplify the argument. Let it be supposed that I own one prime negro, by whose labor I make one bale of cotton yearly; that I send it to England and sell it for $100; that being sold, it requires an outlay of $50 of manufacturing capital to work it up. Again: let it be supposed, that by my increased skill as a planter, instead of one bale to one hand, I make annually two bales; that I sell the same in England for $50 a bale, or for the gross sum of $100, and that it requires $50 a bale as before, or the gross sum of $100 of manufacturing capital to reduce it to cloth. What would be the

result? In the first instance, my planting capital would employ a manufacturing capital of $50. In the second, the same capital would employ a manufacturing capital of double the amount or $100, together with double the number of operatives, and double the amount of capital invested in trade and transportation. Moreover, by the employment that would be given to laborers, who are now idle, equal to the whole number at present employed in manufactures, and the subordinate branches of commerce, a new class of consumers would be created, which no other combination of natural causes can produce; hence the argument leads to the conclusion, that if we can accomplish the result of which I speak with the increase of *production*, the increase of *consumption* of cotton would advance at a rate, nearly if not quite tripled. Under this influence the accumulating surplus of cotton bags piled up in English warehouses, would vanish away like a morning's mist, before the genial influence of the sun. Did the result end here, it would be worthy of accomplishment, but it does not. Cotton is the barometer of the commercial atmosphere, and as it falls in price, in like manner will fall the price of every other commodity of trade; consequently the value of money would be doubled, and although only the same gross amount of silver as at present, would find its way into the planter's purse, still the power conferred upon its possessor, would be at least double its present rate; and, as in one very important sense of the term, *power* is *wealth*, so would each planter be twice as well off as at present. In contemplation of which I say, fortunate will it be for the cotton planter of South-Carolina, if he can contrive, by increased skill and economy, to make three pounds of cotton at ten cents per pound, instead of one pound at thirty cents.

But there are yet other results. As employment is the wealth of the laboring classes, and as their prosperity is the nation's welfare and happiness, it is easy to perceive the benefit which would flow from—the moral influence which would be exercised by—such increase of our agricultural skill upon the general welfare of the world.

The mercantile navies of christendom, freighted with manufactures, directly and indirectly produced by our increased skill, would traverse the unfrequented regions of the globe; and civilization, which is the handmaiden of commerce and the herald of religion, penetrating even "to that vast shore, washed with the furthest sea" —would carry upon its wings, to all the kingdoms, nations, and people of the earth, the same blessings of independence, liberty and peace, which, under God, we now so eminently enjoy.

I have not time, gentlemen, either to extend the argument, or to dwell upon the enchanting prospects held out, but I have gone as I think, far enough for the object I have in view, which is to shew that if the cotton planter can, without adding to the amount of his capital, increase the quantity of the raw material, by improvements in the arts and practice of husbandry, so far from adding to the overplus stock of cotton now collecting in the warehouses of the world,

he will directly and materially aid in its total dissipation, and this too, by the wholesome momentum he would impart to commerce. He would in effect, by his skill and enterprise, and for his sole benefit, lay a tariff upon the labor and capital of the world; and this is the only legitimate kind of tariff. It is the same that Manchester, years since, laid upon Lowell, and which we, the planters of the South, through the secret and iniquitous operations of the American System, are blindly compelled (in their behalf) to nullify at the expense of *body*, *blood* and *bones*.

In connection herewith, we must not loose sight of one important fact, viz., the price of the raw material is never controlled by the quantity *produced*, but by the quantity *consumed*. This is the error, as it seems to me, into which Mr. McDuffie has fallen. To *overproduction* he has attributed effects, which belong properly to *retarded consumption*.

I come now to speak of another alledged cause of agricultural depression, upon which, much stress is laid here in South-Carolina. I allude to the worn out condition of our cotton lands.

It is undoubtedly true, that land, like almost every thing else in nature, wears out by constant use—unless recuperative agents are unremittingly employed, and I knew not that any exemptive exists in favor of the time honored land of the "cypress and pine." But granting all that is asserted, it is the very last cause of complaint which should be resorted to by the agriculturist, for the reason, that he is immediately and possitively responsible for the existence of that condition. Look at Old England—the Island queen of nations! Her chalky cliffs, emblematic of her age! Is her soil worn out? No—like wine, age has improved it. It is better now than it has ever been, and will be better hereafter, than it is now, and this too, under an endless round of cultivation, such as the world, in no other instance, has ever seen; extending back, if not to the dawn of creation, at least as far as the day, when Cæsar's legion carried on the wings of their victorious eagles, the arts of civilization to her shore. Has she the possession of any natural advantages peculiar to herself?

Yonder ancient river, that rolls its tide idly to the sea, abounds with shells and marsh and mud. From this spot, vision is obstructed on every side, by tall trees, that are doomed to fall and rot and waste. The aboriginal denizens of the forrest that surrounds us, have yielded their strong holds to the usurpation of lowing herds—the means and materials, alone thus afforded, properly applied, are more than sufficient to bring back to the soil, all the vigour it ever possessed. If lands are planted, which are impoverished and unproductive, that fault rests upon the head of the planter. In the possession of every requisite of prosperity and earthly happiness to man, in soil and in climate, God has been profuse in his blessings to the people of the State of South-Carolina—our own thrice honored, thrice happy home—

* * * "It is a goodly sight to see,
"What heaven has done for this delicious land,
"What fruits of fragrance, blush on every tree,
"What goodly prospects o'er the *plains* expand."

Away then with doleful complaints of worn out fields, until the great magazine of restorative appliances, with which God has so bountifully supplied us, is entirely exhausted. Let us not then blindly accuse him and forget his blessings, or despise his supreme gifts. Let us be satisfied with that we have, and strive by our skill and our industry, to supply that wherein we are deficient. Let us avert our longing eyes from the problematical fertility of Texas and the West, and fix them upon our own rolling plains, whose shadows reflect no deceitful mirage to tantalize and elude. This course, strictly adhere to, and the El Dorado of our dreams will be realized in the enjoyments of our birth-rights.

We have now reached the point, gentlemen, to which all I have said converges. I have pointed out the deficiences, as they seem to me, of our system of agriculture, and I have considered, as I regard them, some of the most prominent of the popular errors connected therewith. With your permission, I will now proceed to speak of such remedies, as appear to me most applicable to our peculiar circumstances.

It is the remark of a writer, quoted by the late learned Dr. Cooper of Columbia, "that the nearer agriculture approaches to horticulture, the more perfect it will be and the better it will remunerate the labor expended." I will amend this and adopt its application to ourselves, by the substitution of the term "garden culture" for horticulture.

"The nearer the condition of the cotton-field is made to resemble the condition of the well cultivated garden, the better will the planter be rewarded for his time and labor." I hold it to be a self evident truth, that no plant can bear fruit in perfection, unless it is cultivated in perfection. Is the cotton plant so cultivated amongst us? Is it capable of this high state of cultivation? Will any one assert the first position and deny the second? Let us consider:

It is the common practice to plant from six to twelve acres—the last extreme being often reached and sometimes exceeded—in cotton and provisions. Now, is it possible for our negroes—no matter how prime—to cultivate that quantity of land and attend it perfectly? Suppose, gentlemen, one of our neighbors was to enclose from six to twelve acres of land, to be cultivated as a garden, by one hand. What would we all immediately say of such a one? Would it not be truly said, that he stood in need, either of a straight jacket, or, of a cap and bells? May he then, who would be justly considered a madman or a fool, for vainly attempting to cultivate, with one hand, from six to twelve acres of cabbages, be thought less so for making the same experiment with cotton and corn? Can we conceive any thing more preposterous? Yet gentlemen, this is the category in which you, and I, and all of us—the enlightened planters of South-Carolina—unfortunately stand.

Select the most successful planter known amongst us, and compare his cotton-field to his garden, and note the difference. His garden is evenly laid out, smoothly raked, laboriously ditched—roots, weeds and grasses are carefully eradicated. The surface is covered with manure many inches thick, and this is turned in by the spade, which, penetrating one or two feet, effectually subsoils and pulverizes the whole. To correct the condition of the soil, marl or lime is placed upon one bed, salt upon another, ashes upon a third, clay, sand, pond earth, &c. upon others. The seed is sown regularly and equally; last year, on this bed, cabbages; this year, turnips; next year, melons and so on; carefully preserving in our garden cultivation, what in our cotton fields is almost considered the obsolete idea of the rotation of crops. What is the result? Why, vegetables are produced in the greatest possible perfection. Poor worn-out Carolina may compete with the world in mammoth squashes and giant artichokes. At your last anniversary, a beet and a cabbage was exhibited in this hall,—the first might have been fashioned into a vessel capacious enough to perform the voyage of the three wise men of Gotham. The other, Montgolfier himself might have been excusable in mistaking for an inflated balloon.

Yes gentlemen, so great and so common is this evil, of overplanting amongst us—the enlightened planters of South-Carolina (pardon the repetition of a term, which at the least is pleasing)—that I verily believe from the day when the cotton-plant first unfolded its snowy flakes in our fields, to the present hour, no single acre, nay, no single plant, has ever been made to produce its maximum quantity. I believe that one fourth of the land annually planted in South-Carolina, may be made to produce more than the whole now does—not more only, but two or three times as much at the very least.

If our system of agriculture was more correct than it is, not only would the average be higher, but our crops would be more uniform. A total failure would never occur, and a bag to the acre would be no longer an "accidental and unintentional" occurrence, no less surprising to the planter himself, who perpetrates so glaring an inconsistency, than it now is incredible to his neighbors. There is a famous old apologue to be met with in the Encyclopedia, which being exactly to the point, I will with your permission repeat it.—

A vine-dresser had two daughters and a vineyard: when his oldest daughter was married, he gave her a third of his vineyard for a portion; notwithstanding which, he had the same quantity of fruit as formerly. When his second daughter was married, he gave her half of what remained; still the produce of his vineyard was undiminished." Need I point to cause and consequence? The result which befel the vine-dresser of by-gone days, awaits the planters of the old Palmetto State, when from wisdom, the marriage of daughters, or from any other cause, they too shall be led to like curtailment of their plantations.

Unfortunately, two circumstances combine to fix this error upon the country. The first is, cotton planters generally are *too poor* to try experiments—to depart from the old beaten path. To them a bird in the hand is worth a dozen in the bush. The next is, the superabundance of land. Land is so cheap in South-Carolina, and labor is so comparatively dear, that it has been found more convenient (I will not say better, for it is not so) to plant largely and attend imperfectly, than to plant moderately and to attend perfectly. This practice, erroneous as it is, was found to answer very well, and was excusable, so long as there was an abundance of good land, and no regard was had to the future. But now, the condition of things is altered—a change has come over the spirit of the vision—the cream of the earth has been exhausted, and now before good crops can be made, it is first necessary to made good lands. No one doubts this, but unfortunately we have imbibed error so long, that perseverance in it, has become second nature to us. This making bad lands good, involves vast labor, I admit, and it is in some measure appalling to the stoutest resolution. Yet like the Augean labor of Hercules, it is fully within the scope of accomplishment; but there is no part of a planter's duty that requires more skill and judgment than the business of manuring, and herein it is, that most failures occur. An hour lost, or the power to lift one pound misapplied, (scarcely noted at the time) is money gone forever. It would, at present, be out of place to enter into details; to detain you with my crude views of plans and systems; yet such is the benefit held out to the cotton planter, by an extensive and effective system of manuring, that I verily believe it is fully within the reach of possibility, to make one piece of land just as good as any other. To take the poor sour-looking pine barren, that adorns this house with its meagre growth of lilliputian palmettoes, and make it produce cotton, as well as any land in the world. God has drawn the broad lines of demarcation —high lands for the dry culture—low lands for the wet. One region for cotton, one for tobacco, and another for clover. It is man's duty, and fully within his power, to supply or remove all else that may be wanting or amiss. But to accomplish this, perseverance and industry will avail little, unless guided by the light of science. The agriculturist must be educated to his profession, and he must have *books*—such books as will reduce the whole art of planting, as nearly as it is possible, to the method of demonstrating a problem in Euclid, and however long postponed by our own supineness, to this complexion it must come at last. We live in the age of revolutions. Old things are passing away—all things are becoming new. It is easier to predict what will, than it is to foretell what may not happen. It is easier to follow the comet in its eccentric flight through the regions of space, to explore the cavernous realms of the vasty deep, than it is to limit the scope of human ingenuity, guided by reason and aided by science.

Doubtless the name of Mr. Coke, the celebrated farmer of Norfold in England, is familiar to you. He was advanced to the peer-

age by Queen Victoria, on account of his agricultural skill alone. When Mr. Coke purchased the estate that has given such enviable notoriety to his name, it was a barren heath—a desert—the abode of loathsome toads. On asking the steward who was conducting him over the premises, previously to the conclusion of the bargain, if there were any hares on the domain, the reply was, "hares! bless your soul no sir—the land cannot grow grass enough in a whole year, to feed one hare for a single day." According to our notions of land valuation here in South-Carolina, Mr. Coke ought to have forborne to purchase. He thought otherwise, and made the purchase of this *hareless* estate, (heaven save the mark! what an inheritance—no *hares* to the *heir*—such an estate would be in this region of moustache and imperial,) and he has succeeded in making it one of the most valuable landed properties in the wide spread domains of the English Queen, and has earned for himself great wealth and a title of nobility. The first, any of us may well desire to possess, however much our republican sensibilities may repudiate the latter.

I have now gentlemen, as far as time admits, gone through such topics as have occurred to me. Whether I have treated them in a manner acceptable to you, or otherwise, it is not my province to determine, but to the same over-partial judgment that imposed the duty, I leave it to decide upon the manner of its fulfilment.

In conclusion, I invite your attention for a few moments to one other topic, which though it does not belong, strictly speaking, to the department of agriculture, is nevertheless so intimately connected with its best interests, and is of such vast intrinsic importance, as to merit your serious consideration—I allude to negro slavery.

During the last few years, it is known to you, that the phials of abolition wrath and fanaticism have been poured upon the heads of the slaveholders of the South. They have been assailed with a malignity and in a spirit of vindictiveness and intolerance, such as persecution in no age of the world has ever surpassed. Names, hallowed in the archives of their country by a glorious ancestry.—Names that should have remained forever, pure and unsullied upon the pages of American history—Adams, Jay—have associated themselves with the meanest and basest of mankind—Giddings and Birnie—to overturn our institutions, to destroy our glorious constitution, and inevitably to deluge our peaceful fields in blood. The restraints of decency and morality have been disregarded, and language such as the purlieus of Billinsgate scarcely can match, has been precipated like an Alpine torrent upon our heads; and men, women and children, learned and unlearned, have marshalled in thick array on this unholy crusade.

Female modesty, unable to resist the contagion, has discarded the vesture of innocence and virtue, has outraged the instincts of nature, has abrogated the conventional code of caste and custom, and the Woolstoncrafts and Fanny Wrights of yesterday, are forgotten in the abhorrence and disgust, with which to day we turn from the infamy of the Abby Kellys and Miss Thaxters.

Societies have been called into being, conventions have been held under the sanction of royalty, and presided over by the consort of a Queen; presses have been established, money has been lavished, justice has been suborned, England and America, secretly and openly, have leaned to this evil conflict or power of intellect and a force of moral influence, that in any good cause would have been perfectly resistless. Yet, firm and unyielding as the rock bound channel that restrains the cataract in its wild and tumultuous career, the institution of African slavery in America, survives; a monument to that Supreme Being, whose guardian care, extended over innocence and right, doth curb as easily man's unruly will, as "the remorseless dash of billows." Yes, upheld by his omnipotent arm, we may smile at the imbecile rage of abolition and despise "the vile strength it wields," whether gathered at the base of the consecrated Rock of Plymouth, or at the footstool of that throne, which Puritanism, for the sake of conscience, while sowing the *now ripened* harvest of intolerance and bigotry in the New World, had rendered desolate and bloody, in the Old.

Why, it has pleased God to permit the infliction of this great injustice upon us, we are now beginning to understand. A few years since and it was almost the universal belief of slave holders, that slavery in the abstract was indefensible. Now, their belief is changed, and the institution stands vindicated in the eyes of all the world, and the master is assured that the tenure of his property in his fellow man, is a right corferred by God himself, warranted in the letter of his sacred law.

A few years since, and the condition of the slave differed little from the condition of beasts of burden, and it can scarcely be said that he was regarded as an accountable being—certainly not as standing with the master, on the same platform of religious equality. Now, his treatment has improved in all respects, his moral and physical gradation has advanced, and the master is beginning to understand the nature of the solicitude expressed by the apostle in behalf of Onesimus—"a servant, but above a servant, a brother beloved."

A few years since, and negro slavery was considered a great wrong, to an inferior and helpless race of beings—a curse upon both master and slave. Now, it is known to involve high considerations, and to produce imperative obligations, beneficial alike to the one and to the other.

Thanks to the researches of Champollion amongst the tombs of Egypt, it is known with wonderful certainty, considering the vast moral and physical obstacles overcome in the investigation, that the Ethiopean or African race is identical with the descendants of Canaan, the son of Ham, on whom has fallen the curse of endless servitude.

This knowledge has revealed and certified to us, step by step, a long chain of prophetic events, which dating from the descent of

the Ark on Mount Ararat, remain to be fulfilled in the destinies of our own free, prosperous and happy country.

This knowledge has made it known to us, that the institution of African slavery in the United States of America—closely entwined as it is with the best order of political government—the same that God gave to the children of Israel before they asked a king—is destined to exert a wonderful influence upon that happy prophetic period of sacred history, when "the suckling child shall play on the hole of the asp, and when the weaned child shall put his hand on the cockatrice's den."

This knowledge has made it known, that instead of being the agent of oppression, the excutor of injustice, the master is the blessed minister of mercy, raised up by the great Jehovah himself and planted in a new world, to elevate the moral, and to ameliorate the physical condition of that race, (for God is ever merciful in judgment,) upon whom *he* has placed the mark and mantle of degradation.

With such developments before us gentlemen, of the benevolent workings of providence, thrust upon us in a manner almost miraculous, by the apparently untoward events of fanatical persecution, is it not evidently our duty (I stand in the presence of a Christian audience) to submit ourselves in the spirit of faith and humility, with which, as dependent beings, we should receive all the revelations of the will of God? In transplanting Canaan from the wilds of his own arid home, to the cotton-fields of the Western hemisphere, and in surrendering him to a severe though more wholesome servitude here, than he underwent there; in permitting his subjection to the unutterable horrors of the "middle passage," think you God has no ulterior design? God does nothing in vain. May I presume to point to that design?

It is that the poor heathen may participate in the glorious light of christian revelation. It is that his soul may be saved, even should his body perish. It is, that in that day, when Joseph shall make himself known to his brethren, Canaan too—"the poor hewer of wood and drawer of water"—"the submissive knee bender"—may have a brother dwelling in the tents of Shem, to bear the glad tidings of salvation, which Israel shall charge him to convey into the solitudes of his own wild and pestilential home. Let us then not deceive ourselves with the vain supposition, that the destiny of the negro is fulfilled, in the servitude of his present condition—that he has no hope beyond labor in this world and everlasting death in the world to come, or that, if aught remains in the womb of time, it is with what the master has nought to do—that God has no need of the master's co-operation, in the fulfilment of his beneficent designs in relation to the slave. It is indeed true, that God has no more actual need of the master's aid, in the perfection of his plans, than he had of the hand of the prophet Elijah in restoring to life the dead son of the widow of Zarephath. But we may rest assured, that if we neglect the revealed commands of God, or set up ourselves in

opposition to his designs, he will sweep us from the face of the earth, like chaff scattered before the wind.

Sodom! Gomorrah! Babylon! Tyre! Sidon!—those magnificent cities of antiquity!—where are they? An echo answers—where? Idolators—heathen—ignorant of any obligations to the true God—enemies of his righteousness—persecutors of his people—opposers of the order of his providence—God—"the same yesterday, to day and forever," has swept over them with the besom of destruction.

May we, "whose souls are lighted with wisdom from on high," whose inheritance is the peace of God—may we expect to escape his wrath (which overwhelmed the heathen) if we run counter to his designs, as the blind heathen did? I tell you nay: unless the race of negroes dwelling in America, who is the ward of christendom—the disciple of Christians—is afforded the full benefit of the gospel, the same we ourselves enjoy, the same we secure to our children, and provide for the poor of our own colour; God, ceasing in his forbearance, will remove us from the position we occupy, and raise up in our stead, others more inclined to obey his commands.

As to Canaan, his destiny is fixed—the servant to his brethren he is forever. *Here*, in America, God has "enlarged Japhet." *We* are "dwelling in the tents of Shem." Canaan, is our bondsman. Relying upon the truth of this prophesy and upon its exact fulfilment, the cant of hipocrisy and the pharisaical pleadings of self righteousness, that assails us from the North, we may laugh to scorn; but let us not forget, that we must true and faithful allegiance bear to that God, by whose distinguished mercy we have so recently been rescued and preserved from the ruthless passions of abolitionism. *He* has revealed his will. *He* has made our duty plain. *We* must abide by the one, and fulfil the other, or in God's appointed time, yonder glorious luminary, that courses in the blue arched vault of heaven, will shed his beams upon a new race of masters.

NOTE.—Several passages which are printed, were omitted in the delivery for the purpose of abbreviation. They are, however, too few in number, and too unimportant to be more particularly designated.

For the Southern Agriculturist.

METHOD OF APPLYING MANURES.

A great deal has been said and written about manures, and the method of applying them; but they are subjects of which planters should never tire, and about which we have yet much to learn in this region. Have our planters well considered the advantages and disadvantages of the different ways of applying what little manure we make? For one, I should be glad to learn the reflections and experience of all who have. It is a question that is neither practically nor scientifically settled yet, whether our manure should be put on as a top-dressing or ploughed in. Nor has it been satisfactorily tested, whether we should spread it on the land in the fall, winter, or spring, for the ensuing crop. In determining with these questions, climate must undoubtedly be taken into consideration, and whatever may be the opinions and practices elsewhere, it yet remains for us to arrive at satisfactory conclusions in reference to our own locality. A good deal too, depends on the crops to be cultivated. With us, all such discussions refer mainly to corn and cotton, crops not much grown in regions where these questions have been agitated. A series of well tried and *well reported* experiments on these points, would be highly interesting and very valuable to Carolina planters. Who will institute them?

In the mean time, allow me to make a few suggestions on another branch of the subject, more immediately forced upon the attention of all who use manure. We commonly apply it to our corn and cotton, either in the hill, or in the drill, or broadcast. Observation, experience and reflection have latterly convinced me that broadcasting is far the best method. This will, perhaps, be generally admitted, where large quantities are used, but I believe it correct also, where even small quantities are applied. When as much as one hundred bushels of compost are given to the acre, I am satisfied it should be put on broadcast, and I am very much inclined to think, that even with fifty bushels, it is the best plan. We all know the difficulty of getting a stand when manure is put in the hill or drill. This fact is so universally admitted that I will not stop to explain the cause of it. It is however, a most important fact. Not unfrequently, all the benefit derived from such manuring is more than overbalanced by the loss in the stand, even when the manure tells

well throughout the crop. We all know too, that most generally the manure thus applied, ceases to act, "gives out" as we say, at the period when it is most needed by the crop—about the first of June commonly. This is so marked in regard to cotton seed manure, that many planters reserve their cotton-seed and put it around the corn after it has grown to be half leg high. It is erroneously supposed that the manure really "gives out" at that time, though planters, entertaining this opinion, will, nevertheless, admit they can see the effects of the *same manure* on the next, and perhaps several succeeding crops. The truth is that the roots usually begin about the first of June to harden near the stalk, so that they no longer imbibe nourishment at that spot, and the roots and spongeoletes which feed the plant have overshot the manure in the hill or drill. They then want it elsewhere. We all know too, that manure frequently fails altogether,—that in fact it does so to a great extent two seasons out of three when thus applied. If the year is dry, manure, at the usual depth below the surface of the hill or bed, does not get moisture enough to ferment or dissolve it. If the year is wet, it is supposed to dissolve and sink below the reach of the roots. This last opinion, however, is erroneous. A recent writer and practical farmer in Scotland, whose name I forget, but whose communication was made to the National Agricultural Society there, has established the fact, that the most important salts in compost manure will not decompose in earth saturated in water. My own experience furnishes me with an illustration of the truth of this. A few years ago, I manured my cotton in the usual way, by drilling it in the furrow and bedding on it; a few acres, however, were manured by opening a trench on the top of the bed, putting the compost there and planting on it. The season proved a wet one. The manure *under* the bed did no good whatever. The earth was saturated with water there. That *on* the bed had a very decided effect. The earth then dried under the immediate influence of the sun to an extent sufficient to permit decomposition. I never understood how this was, until I saw the suggestion of the Scotch writer. I formed various opinions, but at length concluded it was one of the endless and unaccountable vagaries of manure, and did not change my plan of manuring until I gave up putting it in the drill altogether, and resorted to the broadcast method.

As I rarely put more than forty bushels of cotton-seed to the acre for manure, I still place that in the corn-hill; yet I do not think

after this year, I shall again do so, but spread even forty bushels over the whole surface, except when for a special purpose—to outgrow joint or nut grass for instance—I want the corn to shoot up rapidly at first. When a stand is obtained and the seasons are favorable, corn and cotton will undoubtedly start earlier when manured in the hill or drill; but both these contingencies are to be risked, and from one or the other the planter is sure to suffer materially when he thus applies manure. The crop will not be so well grown on the 20th May, when the manure is spread broadcast I will admit; but how the case will be on the 1st July, and more especially on the 1st of September, is a matter of far more real importance to the planter. And that the broadcast system gives the advantage here, I am fully convinced. Under this system the stand is never impared by the manure. This is certain. It does no harm at any rate. The compost being spread equally over the land, the roots reach it wherever they extend, and its effects are felt equally throughout the season. The crop is not at one time over stimulated and *intoxicated* by it, to fall into the "horrors" at another and more important season, as I have known it to do. A large stalk forced early, has large vessels and requites a great deal of nourishment to support it. If that nourishment fails, the *fruit must fail*, however fine the weed may be. If the amount of food is equable throughout the season, though moderate, there is a reasonable product.

Again, if the manure is spread over the surface and left there or ploughed in shallow, it gets the benefit of light rains and decomposes, while it is above the point where the ground remains constantly saturated in wet seasons, so as to prevent decomposition. So that it is *felt* whether the year be wet or dry, and does not absolutely require moderate seasons to bring it into useful action. I am not satisfied that in our climate it would be best to leave it on the surface any great length of time, but if it is ploughed ever so shallow, I have no fear of its wasting on soils that it would not equally waste in contact with, under any other circumstances. My reasons for this I could give, and perhaps say more in favor of the broadcast system, but I have stated what is most material to my present purpose, and have already spun out the article to an unreasonable length.

HOLKHAM.

From the Louisville Journal.

HOUSING AND CURING TOBACCO.

Having had frequent applications for information as to the mode of housing and curing the celebrated Mason county cigar leaf tobacco, I have thought that I could best fulfil the wishes of my friends by giving the information desired through the medium of the Louisville Journal and Dollar Farmer.

The tobacco planters of Mason county invariably cure their tobacco without the application of artificial heat, except occasionally during damp and rainy weather; it is, therefore, of great importance to construct their houses so as to afford a free circulation of air through their tobacco when hung up. But as it is very injurious to tobacco to be exposed to dews and driving rains, while curing, it is necessary that tobacco-houses should be tight enough to guard againt any injury from this source. The great *desideratum*, then, is, so to contruct tobacco-houses as to protect the tobacco from the effects of rains and dews; and at the same time, afford a free circulation of air through every part of the tobacco-house.

To accomplish both these objects, and at the same time afford the greatest facilities and saving of labor in hanging tobacco, I recommeud the following plan for a tobacco-house, sixty by forty-five feet. The same plan will suit for a house of greater or less length than sixty feet, though, in the general, it would be better to increase the *number* rather than the *size* of tobacco-houses, as they could thus be placed in situations more convenient to the ground in which it is intended to cultivate tobacco.

The plan of a tobacco-house sixty by forty-five feet. Let a piece of ground be selected as convenient as may be to the place where tobacco is intended to be cultivated, at least sixty feet long, without any inclination either way, or as little so as possible; and forty-five feet in the other direction, with barely sufficient fall on the sutface, *each way*, to carry off the water dripping from the roof on each side. Along the lengthway of this rige, let two rows of posts be set, parallel to each other, and twenty-one feet apart. The posts may be set in rows ten or twelve feet distant from each other. If the former distance be preferred, *seven* if the latter *six* posts will be required in each row. These posts should be eighteen feet long, measuring from the surface of the ground, (if the ground is not perfectly level, the length of the posts must be so arranged as to bring all their tops to a horizontal level,) and tenanted on the top. Plates must be run from end to end on the top of these posts, (splicing the plates to make them long enough.) The posts on the other side, must be connected together by cross-ties, (strong enough to hang tobacco on.) The upper ties to be morticed in the plates, and secured by stout locust or oak pins. Another set of ties should be inserted so as to leave a space of four feet four inches, measuring from top to top. A third set of ties still four feet, four inches lower. Each of these,

like the ties morticed in the plates, should be firmly secured to the side posts by mortices and stout pins. These last ties will be about nine feet from the ground, and sufficiently high for a wagon and team to drive under them with convenience. A fourth set of ties should be inserted about five feet from the ground, one end let into the post by a mortice of the usual kind, and the other by a side mortice. These ties should not be pinned, but left unfastened, so that they may easily be taken out and laid aside when housing tobacco, so as to admit a wagon and team to pass through the house from end to end. The two ends of the building should be so framed as to admit of a double door at each end, wide enough for a wagon and team to pass entirely through. These doors must open outwardly, and in clear weather should be kept open when tobacco is hanging in the house, so as to admit a free circulation of air. The body of the house will thus admit of four tiers of tobacco. The rafters should be set on the plates, four feet from centre to centre, and by making them pretty taut will admit of two cross-ties each for hanging tobacco on, and thus the roof will hold as much tobacco as one tier in the body of the house. To afford an abundance of air to the tobacco in the roof, there should be a door in each gable end, which should be kept open all dry days till the tobacco is perfectly cured. On the cross ties, connecting the two sides of the house, rails or sawed scantling should be laid, so as to admit four ranges of tobacco sticks, four feet two inches long. When tobacco is first hung, these sticks should be one foot apart from centre to centre. When the tobacco completely wilts, which it will do in a day or two after it is hung up, there will be open spaces, left between the different ranges of sticks, and thus the air may freely circulate from end to end, partly through the large folding doors, and partly through those in the gable ends. Allowing the sticks to be one foot apart, and admitting the roof to hold one-fourth as much as the body of the house, the contents of the whole will be one thousand five hundred sticks, or twelve thousand plants, supposing each stick to hold eight.

The above is a description of the main building, twenty-one by sixty feet. On each side of the main building should be a range of posts, corresponding with those in the main building, and twelve feet therefrom. These should be tenanted and have plates thereon, the tops of which should be about twelve and a half feet from the ground. These plates should be connected with the plates of the main building by rafters, spiked on to each plate, and also by three tiers of cross ties, the first ranging with the top of the side plates, and connecting with the posts of the main building; and the other two from post to post, each set four feet apart, measuring from top to top. The whole should be firmly connected by tenants and stout pins. These three ranges of cross-ties will admit of hanging three tiers of tobacco, on each side of the main building, and will hold one thousand and eighty sticks, and eight thousand six hundred and forty plants. It will be seen from the foregoing calcula-

tions, that the house will hold, at the first hanging, twenty thousand six hundred and forty plates. As the tobacco when partially cured may be closed up, so as to leave the sticks about eight inches from centre to centre, the house by re-hanging will hold one-third more than the above number of plants, say about twenty-seven thousand five hundred.

The house should be enclosed with plank erect, and placed side by side, without lapping; pine plank, and that not seasoned, will answer best. This mode of covering the sides and end of the house will sufficiently secure the tobacco from the weather, and by the shrinkage of the plank will admit some air through the cracks. In planking up the sides it will be necessary to hew the outsides of the posts, and ship lap pieces of scantling for nailing the planks to. The top pieces, thus ship-lapped, should be inserted about twenty inches below the side plates, and the planks on the two sides should extend no higher than to cover the pieces to which they are nailed. Thus there will be a space of twenty inches, under each of the eaves, for the admission of air. To prevent the rain from driving in at these apertures, broad plank should be suspended to the plates by hinges, so as to raise and let them down according to circumstances. Thus on each side, as well as at the two gable ends, air may be freely admitted.

The outside posts all around should be of locust or cedar, and firmly set in the ground. The inside ones may be set on broad rocks, having a firm foundation. For these shorter posts will, therefore, answer.

I have been assured that a house thus built, if well braced at the corners, will stand perfectly secure, *without setting any of the posts in the ground.* As, however, posts set on rocks, lying on the surface, would be liable to settle more at one place than another, I would prefer having all the outside posts planted about three feet in the ground. If locust or cedar posts are not to be had, I would recommend white-oak posts, well charred at the ends, as far as they are to be inserted in the ground.

Having completed the description of the house, I will add a few words as to the most economical plan of housing tobacco.

It should be placed on sticks in the field where it grew and hauled to the tobacco-house by hanging it across a long frame, say twenty-five feet, fitted up as a wagon-bed, and placed on wheels, coupled at a suitable distance. The frame should be about three and a half feet high, and the same width. On this frame the sticks may be crowded as close as may be done without bruising the tobacco. The wagon, thus loaded, should be driven through the centre of the house; and the sticks, having each the proper number of plants, should be transferred to the place to be occupied by them. When the two sheds and the main building are all filled except the two lower tiers of the latter, then the tier next above the ground tier should be filled on each side, with one range of sticks, leaving the middle still open for the wagon to pass through. When this

is completed, so much tobacco should be hauled and unloaded as will be sufficient to fill up the second tier, and the whole of the ground tier. The second tier should now be completed, and then the cross tiers of the lower tier should be replaced, and filled with tobacco. A house, thus constructed and filled with tobacco as herein directed, will not require the application of artificial heat, and, therefore, nothing need be said on that subject. A. BEATY.

From the Albany Cultivator.

EXPERIMENTS IN THE CULTURE OF POTATOES.

L. Tucker, Esq.—Time was, as aged people have told me, when a barrel of potatoes was considered a sufficient winter's supply for any family. From such a small beginning it has become one of the most important crops of our country, and its importance should enlist the feelings of all farmers to make every possible exertion to increase the crop without extra labor. There is a great difference in people in regard to the amount of seed necessary to be used in planting, and in regard to cutting, &c. Some farmers plant their potatoes whole, and use from 20 to 30 bushels on an acre; some plant only the seed end, thereby saving one-half or more; while others pursue different methods. I never knew an individual, however, who only planted a part of the potato, that did not plant the seed end. In my opinion, it is desirable that experiments should be made extensively, to ascertain, if possible, the exact amount of seed necessary—if it should be cut—and if so, to ascertain that part of the potato which is best for planting.

I send you the following account, hoping others, that have never done so, will be induced to make experiments with the potato, (and a great variety can be made,) believing the result will be beneficial.

In years past, we have cut our seed potatoes, using those of middling size, and put the seed ends of two in a hill. In 1843 and '44, we planted a few rows with the rest, cutting the seed so as to have only one eye in a piece, and put three pieces in a hill. At harvesting, it took two or three more hills for a bushel, where only three eyes were put in a hill, than where the seed ends were; but the potatoes were larger and fairer, with but few that were too small for the table, while of the others, probably a fifth part were too small. The hills might be planted nearer together of the three eyes in a hill, thereby making the product of an acre greater than of the other method.

This year we tried a new experiment. Took potatoes about the size of a hen's egg; cut them, leaving about a third or more of the potato on the seed end, and planted two rows, putting too seed ends in a hill in one row, and two *other* ends in a hill in the other

row. The rows were treated and cultivated exactly alike throughout, but owing partly to the drouth the yield was not large. In the row in which the seed ends were planted, it took 40 hills to make a bushel; in the other only 29, being one-fourth difference in the yield.

In the first experiment, it will be seen there was a saving of seed, in the second an increase of the crop. EATON.

East Ware, N. H., Dec., 1845.

WARTS ON PLUM TREES.

Mr. Breck.—There has been much discussion in regard to the origin of excrescences on plum trees. The parties seem to stand, as those who believe the warts to be the effect of an "*Inherent infectious disease*," and the others, are the "*Insectarian*," who hold that the warts are caused by the limbs being stung by insects, who deposit their eggs under the bark. The theory of the "*disease*" party, is powerfully and lucidly set forth in detail by your valuable correspondent, Dr. Burnett, (see N. E. Farmer, vol. 22,) and abstractly by Mr. Downing, in his "Fruit and Fruit Trees of America." "The knots is a disease, attacking the bark and wood; the former at first becomes swollen, afterwards bursts, and finally assumes the appearance of large irregular black lumps, with a hard, cracked, uneven surface, quite dry within. The passage of the sap upwards, becomes stopped by the compression of the branch by the tumor, and finally, the poison seems to disseminate itself by the downward flow of the sap through the whole trunk, breaking out in various parts of it."

Another paragraph, on same page, will account for the "Insectarians":—"There is yet some doubt respecting the precise cause of these knotty excrescences, though there is every reason to think it is the work of an insect. Professor Peck and Dr. Harris believe that they are caused by the same curculio, or plum weevil, that stings the fruit; the second brood of which finding no fruit ready, choose the branches of this tree and the cherry. This observation would seem to be confirmed by the fact, that the grubs or larvæ of the plum weevil are fequently found in these warts, and that the beetles have been seen stinging the branches."—p. 270. M. P. Wilder, Esq., on dissecting the warts found the larvæ of insects therein, which he supposed were of the curculio, and sent them to Dr. Harris for his examination, and he (Dr. Harris) was supprised to find them not the larvæ of the curculio, but of some other insect. It has been said, that insects were not the cause of the excrescence, but it was a favorable spot wherein to deposit their eggs, hence the different species of larvæ found there.

At the late discussion at the State House, on the cultivation of fruit, which has called forth this communication, B. V. French, Esquire, is reported to have said, "As for the excrescence on

the plum tree, he knew no remedy; he believed the *disease infectious.*" And the Hon. John C. Gray, said, "The curculio is not the cause of the wart, which I believe to be an *inherent disease* of the tree."

I will now communicate a fact on the "Insectarian" side of the question, and such proof the fact as I now send you in the two sections of plum tree enclosed; the large section is the Princes' Imperial Gage, the other a seedling. The limb is bored by an insect, who perforates from 10 to 100 or more holes, close to each other, from 25 to 40 to the inch, and down to the pith in every instance where I have examined, and probably the egg is deposited in the pith.

In one instance, wood two years old and much larger than the section before you, was bored to the pith. You will not say that the eggs or larvæ you see are found on dissecting the excrescence, or that the eggs were laid in the wart because it was a favourable place for deposite, for they are found prior to its development, a fact, which appears to me to be one step-gained towards the true clause of the excrescence, and instead of despairing of a remedy for the "*disease,*" it should suggest a preventative for the cause.

From my limited observation, I should say, that the wounds were made near the end of the growing season for the plum. My attention was drawn to a wound, by recent gum on the limb of a "Bingham, near the end of September last. On cutting the bark and a thin slip of wood, and applying a microscope, of small power, the holes were discovered, from 10 to 100 on some limbs, in every instance down to the pith, and about the size of a cambric needle.—No eggs or larva were found at that time. Other trees were examined, and about twenty wounds discovered; many were cut into and examined, some subjected to experiment, and a few left, as found, that I may raise a limited crop of warts for dissection in all the growing season, ensuing, unless some of the able entomologists who have so often instructed your subscribers, will inform us of the name, appearance and habits of the mature insect.

It is due to the other side to say, that none of my trees are more than 8 years old; have many varieties, and have not seen a wart on one of them, other than those in my garden. I know of but eight within a mile of my premises, and only one of them has warts.

CHARLES NEWMAN.

Reading, March 13th, 1846. *New-England Farmer.*

SOAP SUDS AND SULPHUR TO KILL BORERS.

Mr. Editor:—About twenty-five years ago I set out an orchard of about one hundred and fifty apple trees, in a hard gravelly soil, rather inclining to clay; for about 15 years I kept it constantly under cultivation, well manured, and the trees flourished, covering the ground so much that it was very difficult to plough it, I then laid it down to grass, but in four or five years I found the trees began to

fail; they did not exhibit the dark green foliage indicative of vigorous health. I concluded it was owing to the length of time it had laid in grass, and to renovate it, I ploughed it as well as I could, and dug around the trees. In this process we discovered that the borers had attacked almost every tree. As a remedy I took some large knitting needles, and myself and boys searched carefully for their holes, when by inserting the needles we put an end to further depredations. (This answers every purpose, and is much better than knife or chisel.) I then had the rough bark scraped off, and the last of May the trees were washed with strong soap suds and sulphur, (2 quarts of soft soap, and ¼ lb. of sulphur to a bucket of water,) this operation was again repeated in August and has been repeated yearly since. I have not been able to discover a borer since the first application and my trees flourished and bear fruit abundantly.

This wash I think is far preferable to potash and water, as that is liable to injure the young trees unless great caution is used in its application. The soap-suds and sulphur answer all the purposes of exterminating the insects and their eggs, and as the latter is obnoxious to all insects, they are not fond of selecting trees thus washed for laying their eggs and commencing house-keeping.

[*Massachusetts Ploughman.*

SOWING FLOWER SEEDS.

We extract the following article from the London "Gardener's Chronicle," edited by Professor Lindley. Complaints are universal, every year, on the subject of the vegetation of flower seeds. Indeed we have, time and again, experienced serious disappointment ourselves, and felt disposed to blame the seedsman, when the fault was our own. Our hot and comparatively dry climate requires more care in sowing delicate seeds than that of England, and the directions given in the following article are equally and even more important to be followed here than there.

In addition to the mere matter of flower-seed sowing, the article below contains suggestions of general practical utility to both the farmer and gardener, and is worthy of careful consideration.

[*Editor Genessee Farmer.*

"How am I to sow my flower-seeds?" "I have had some beautiful seeds given to me, but I have no gardener, and I don't know what to do with them." "I don't know how it is, but my gardener never *can* get his seeds to grow. What *shall* I do?" "How deep, sir, *would* you advise me to bury my seeds?"

Such are the sounds of woe with which our ears are not uncommonly assailed. That information is much wanted in this matter is most certain; that endless mistakes follow in the train of all vague directions nobody can doubt; that seed-sowing does demand some "knack" and practice we readily admit, and therefore we shall on this occasion utter no *vox ambigua*, but cut the matter short by saying, "don't bury your seeds at all!"

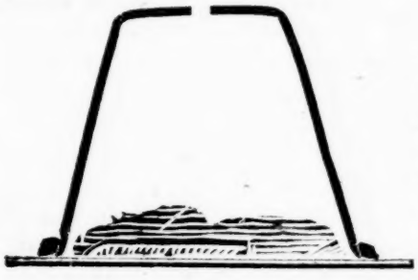
We can quite imagine the surprise that this announcement will occasion in some minds; but we presume to hope that when we have been heard to an end, the recommendation will not be thought so paradoxical as it appears to be.

Let us, in the first place, ask why seeds *are* buried alive under clods of earth? Does nature thus inter them? And if so, who or what is her grave digger? When the acorn falls it has no power of wriggling into a hole in the ground, and when the chickweed scatters its tiny seeds, they lie and grow where they fall. What reasons then, *can* gardeners have for making themselves seminal sextons?

"Reasons!" says the man of learning, "I will give you fifty; firstly, a seed must have darkness and oxide of hydrogen in order to germinate; under these influences its C combines with the O of the latter, and forms CO_2 which is extricated; then diastase comes into play, and the amylaceous particles are saccharified; thirdly"—but hole— enough of that. "Reasons!" says Mr. Polyanthus, the gardener, "why how are you to keep the birds off if you do not bury seeds? or the mice? or such vermin? How are you to keep them moist when they first chip the shell? How are they to hold to the soil when they have got a root? Reasons enough are these, I think."

Certainly. But, then, cannot all these objects be secured by other means than burial? Let us see.

We want fine dry soil. First provide that; get the ground level and press it gently with a piece of tile or glass. If it contains stones or clods remove them. If your seeds are very small, sift over it a little silver sand, or peat; upon this scatter the seeds *thinly*. If they are excessively small, mix them before sowing with dry sand or peat in order to separate them; and again with gentleness press all flat.



Then provide some coarse moss —any sort will do, but Bog-moss or Sphagnum is the best—having previously soaked it in boiling water to kill insects or their eggs.— Press it till its wetness is exchanged for dampness, and then, while warm, scatter it *loosely* over the seeds. Press it down, invert over the moss, a common garden pot, lay a tile on the hole, and the operation is performed.

But the little apparatus thus contrived must be watched. In a day or two lift up the pot, raise the moss and examine the seeds. If the moss is dry, which is not likely to happen, again damp it with *warm* water. If all is still, have patience. Thus go on until you find your seeds *beginning* to grow. Then remove the tile from the hole in your pot, and leave them for another day. At the end of

that time you will possibly find that the seeds have grown much more; if so, take away a part of the moss, so as to give the young things more air and light. The next day, raise the pot on one side, so as to open it to the south. This may be done with a stone placed beneath its front edge; but do not raise it all round, because if you do, the strong current of air setting over your seedlings and through the hole in the pot will chill them. As soon as you find the seedlings green and plump and stout, the moss may be entirely removed and the pot raised higher. And very soon, that too, may be quite dispensed with, unless there are frosts at night, or bitter dry easterly winds by day. In the former case, replace the pot every night, and take it off again in the morning; in the latter, it is wise to place a little screen between the plants and the wind. For this purpose a pantile is a capital thing, but a piece of board, or any such matter will do.

In this way you secure all that you want in order to get a hardy seed to grow:—darkness, moisture, air, warmth; and afterwards moisture, air, light, and shelter.

Let no one say that large seeds cannot thus be raised. The finest Oaks spring from Acorns dropped in the forest and covered by a few leaves. The Sycamore, the Ash, the Beech, the Horse Chestnut will all sow themselves wherever their seeds can stick to the ground until a coverlet of leaves is moistened by an April shower and warmed by an April sun. Neither have such seeds any difficulty in steadying themselves by their roots; a long fang is driven by vital impulse into the earth, and it is to that, and not to a bit of the buried neck of the stem that the seeding trusts for support and nourishment.

We will only add one word. Those who have ever attempted to sow seeds upon rockwork, know to their cost how very difficult it is to make such seeds take root. The method now proposed answers the end completely, and it is the only plan which, in difficult cases, does succeed. *Experto crede Roberto.*

NOTES OF A BOTANICAL TOUR.

Mr. Tucker—I spent three days collecting specimens in the vicinity of Painted Rock, and then went to the Warm Springs, six miles distant, in the famed county of Buncombe, in North-Carolina. These springs were formerly much resorted to by the Southern Planters during the summer months, but latterly, owing to the facilities of travelling, many travel almost continually without incurring much if any greater expense than they would by spending weeks in succesion, and perhaps months, at the springs. However, the Warm Springs have many attractions. They are in a beautiful mountain valley formed by the French broad river, and surrounded by fine scenery. The buildings are spacious—the bath is delightful.

A bathing house divides the largest spring, for the accommodation of both ladies and gentlemen where a person can indulge in swimming in water about four feet deep. The water is so strong that it will float the body with little effort. Its temperature was 94 degrees Far. Nor does it vary much throughout the year. The springs are near the edge of the river, and the one used for drink is overflowed by the river at high water. In this last were great numbers a small shell, *(Physa aurea.)* A few miles beyond the Springs, on the road to Ashville, I stopped at Col. Chunn's, who was absent —his lady and a hired girl being the only white persons about the house. The road still wound along the French Broad, whose rapid stream was ever in view, forcing its boisterous course among the rocks, with high mountains on each side. This road belongs to a corporation and has several gates. It is a great thoroughfare, being the route pursued by most travellers and drovers passing from Tennessee into North Carolina. The drovers of horses, mules, cattle, and hogs, are from Kentucky and Tennessee, for the South Carolina market. Staid all night at Col. Chunn's and next morning crossed the river and ascended a small stream two or three miles, where I fouud *Berberis canadensis,* (Barbary,) Pursh, which is certainly very distinct from *Berberis vulgaris,* a native of Europe, now so common in New-England as to lead many to suppose that it is indigenous. Pursh's Barberry differs from the *B. vulgaris,* in its smaller and narrower leaves, and also in the size and form of its fruit and flowers. The former is a native of the mountainous parts of the Southern States, and of rare occurrence, as it has been collected by few botanists since the time of Pursh, whose specimens are still in the herbarium of the late Prof. Barton, of Philadelphia. I have been thus particular because the two plants have been sometimes confounded; and Downing, in his Fruits and Fruit Trees of America, p. 160, says that they are scarcely distinct. On the 12th of May, arrived at Ashville, intending to visit Mt. Pisgah, a high, conical mountain in full view, about twelve miles distant, over-topping its neighbors. I was told that the season was not far enough advanced to bring vegetation forward on the high mountains; and as I wished to see the Table Mountain of South Carolina, it would be best to proceed there immediately—explore the mountains farther south, and return to Pisgah at a more advanced season. The climate of this region is not much, if any, warmer than that of Western New-York. During the summer of 1842, the thermometer ranged generally from 70 to 85 degrees, in the valleys, while on the mountains it was frequently about 60 degrees. and sometimes much lower.— The guide who accompanied me to the summit of the Roan, a high mountain in Yancy county, said that he had been on the top of that mountain the 22d of June, when a storm arose and covered its top with snow. On the table lands of thes emountains, the inhabitants often do not raise corn enough for their own consumption, on account of the frost; the principal crops being oats, buckwheat, and potatoes, with an abundance of cattle and hogs, rarely a little wheat

which is raised sufficient for home consumption in the adjacent plains. On a small farm in the vicinity of the Roan mountain, I was told that they had been subject to frost every month in the year. When I left the Southern portion of Alabama, it was the middle of March, the woods were green, with their full expanded leaves; in about a week I had reached the elevated region South of Huntsville, in the Northern part of the State, where the leaves had not yet attained half their usual size. From the 1st to the 10th of April, in middle Tennessee, the leaves were nearly full grown and the inhabitants were busy in planting corn; but at the middle of April, for thirty miles on the table land of the Cumberland mountains, the trees had just began to put forth their leaves, and the ground was white in the morning with a severe frost.

On descending into the plains of East Tennessee, the country was green with verdure, and the farmers were there also busy in planting corn, and now, the middle of May, among the mountains of North Carolina, I found myself where vegetation had scarcely clothed the plains and woods with green while the leaves of the high mountain trees were about half grown. I should also remark that the spring of 1842 was from two weeks to a month earlier than usual.

S. B. BUCKLEY.

West Dresden, Yates County, N. Y., 1846. *Albany Cultivator.*

MANUFACTURES IN THE SOUTH.

We have been highly gratified to find by the Southern papers for some time past, that manufactures have been and are being established in nearly all the Southern States, and as far as such experiments have been made, that they have generally resulted beneficially. This is as it should be—it is taking the bull by the horns in good earnest—and will, if persevered in, confer a degree of prosperity upon the people of the South which has not been felt there for many years. If the people of the middle, eastern and northern States, can afford to pay the cost and charges of transportation and insurance of the raw material from the South, and still make money by manufacturing, those of the South ought surely to realize more profit, as they have the raw materials at their own doors, and would consequently save the heavy expense to which we have alluded.

It has been objected that the slave labor, upon which the people of the South would chiefly have to rely, are not so well adapted to the purposes of manufacturing as are the free whites employed in the present manufacturing districts of the country. This objection, we however consider to be more imaginary than real, as with a few intelligent white superintendents, the blacks might be taught to be skillful workmen. Such at least has been the case in all the Penitentiaries in this part of the country where manufacturing is carried

on. In that of Maryland, fully two-fifths of the weavers are colored men, many of whom are most expert workmen, and it is not saying too much for the character of the goods fabricated in that institution, to claim for them a superiority over almost any other goods of similar styles manufactured in any other establishment in the country—at all events, they command ready sale and the very highest prices, and surely, a stronger evidence of the excellence of their quality could not be desired. [*American Farmer.*

WOOL.

The annexed article from Hamilton Gay, Esq., on the growth, preparation, packing, &c., of American Wool for the English market, contains information which will be valuable both to the farmer and merchant. It was elicited by the following note, dated—

New-York, May 16, 1846.

Dear Sir :—You have been engaged for the year past in exporting American wools to various markets in Great Britain, and must have acquired much valuable information respecting the manner in which our wools should be prepared for those markets. Such information is much wanted by our farmers and wool dealers; for it is evident that wool is to be henceforth an important article of exportation from the United States. Allow us, then, to inquire, whether you will not do us the favor to write out your impressions for the Journal of Commerce.

We are, sir, your ob't servants,

HALE & HALLOCK.

Hamilton Gay, Esq., 53 South-street.

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New-York, May 16th, 1846.

Messrs. HALE & HALLOCK:

Dear Sirs :—I have your favor of this day's date. Such information as I can give on the subject of your inquiry, is at your service, for the benefit of those interested.

More than one-half of all the American fleece wool exported from the United States, of the last year's clip, was owned and shipped by myself and by others having a joint interest with me. The purchases were all made at the lowest point of the season, beginning on the first day of September, and closing on the 25th day of October last. The result has been a net loss of $5993, and 188 bales of wool yet unsold; equal only to the fraction of a penny sterling on each pound. Not a fleece of the wool was sold to meet the payment of drafts drawn against it, nor was any portion of it unduly pressed upon the market;—and this loss arose from causes unnecessary, easily avoided, and entirely within the control of parties in this country.

The prices of United States fleece wool are affected very injuriously in Foreign markets by its unclean condition. It contains too much oil, and yolk, and dirt. The sheep are generally washed with too little care, and run too long after washing before shearing. A large portion of the wool from this cause, must pass through the hands of those who sort it and scour it in soap and water, before it is sold to the manufacturers.

The wool itself is of superior staple, and while upon the sheep is inferior to no other in the world, of equal grade; and it may be safely stated, that every pound of oil, or other worthless substance, will, in the English markets, deduct from the value of the wool containing it, the price at least of two pounds of wool. English manufacturers and samplers, before purchasing, open a portion of the fleeces, and examine carefully, not only the fineness, but also the *strength* of the staple, and its condition throughout.

The first impotant operation in preparing our fleece wool for export, is to properly cleanse it before shearing. The sheep should be washed in clear running water—the water must run freely through every part of the fleece, and the wool and every part of it should be pressed and worked with the hand while under water, until the dirt and oil are removed, and the *water runs off clear*. The shearing should then take place as soon as the sheep become dry after washing.

Then comes the tying up of the fleeces.

All the loose locks, clippings and tags, and every thing unclean, or of an inferior quality, and the coarse wool from the thighs, if there be any, should be *wholly rejected*, and the fleeces tied up firmly so as to keep their shape, and show, as is customary, the best part of the fleece on the outside.

This terminates the wool-grower's part; but I will here remark, that sheep should be kept as nearly as possible in uniformly good health and flesh, because every portion of the staple or fibre of the wool which grows while the sheep are very poor from disease or want of food, has so little strength as to break in working; and if this weak growth takes place in the fall of the year, it destroys the fleece for many purposes.

The next step is to properly sort and sack the fleeces, and direct them to the best market. This is the merchant's part, and more than a shipper's profit depends upon its being performed understandingly.

In England each manufacturer devotes his attention to one particular description of goods for which his machinery has been constructed, and he makes no other. The makers of each kind of goods have established themselves mostly together in some one part of the kingdom, where they have a wool market of their own, in which they seek for the qualities and descriptions suitable for their purpose, and will buy no other. The broad cloth makers in the West of England—the Worsted Combers of Yorkshire—the flannel manufacturers of Rochedale—and those who make hosiery in

Nottingham,—purchase in their several markets a supply suitable only for their own machinery. So nice does this discrimination run, that the fleeces of fine wool, taken from sheep one year old which were never before shorn, are mostly sent to one part of the country and there sold to be used for one purpose, and the fleeces taken from the same sheep the next year, are sent to another part of the country, and there wrought into a very different kind of goods. Thus it is of great importance that *fleece* wool for shipment, before it goes on board, should be sorted and sacked according to the grades of foreign manufacturers and suitable for their purposes, in order that it may be sold *directly* to them—otherwise, even if clean and in good order, it must pass first through other hands, that resort it, re-sack it, and distribute it to various parts of the kingdom at considerable expense.

The size of the bales is the next thing to be kept in view. I have paid on large shipments as high as one dollar *per bale* for "Dock Dues," without reference to the size of the bales; while at some ports the charge is less than one tenth part of this sum.

Custom in England gives the purchaser an allowance on *each bale* called "The Draft; but the amount thus given varies at the different markets. I have many accounts of sales in which only one pound weight *per bale* is deducted for "the draft." I have other accounts of sales made in different places, in which 2 lbs., and 3 lbs., and 4 lbs., and even 8 lbs. *per bale* is deducted for "the draft," without reference to the size of the bale. This may seem unreasonable, but is established by the ancient usage of the different markets, and must be complied with. The bales should therefore be of a size suited to their destination; but not too large, else they will not not be lifted, but rolled over the docks and streets. Each sack should be firmly packed by a man inside, but never pressed by machinery, and every fleece of weak staple carefully rejected, and those fleeces packed by themselves.

The shipment then requires some attention.

The wool should be placed on board dry, with the sacking whole and clean, and should always be sent as light freight in the upper part of the vessel. Our wool contains too much oil and gummy matter to be placed low in the ship, with heavy weights pressing upon it, without being in some degree injured by matting together.

This closes the part of the American Merchant.

In illustration, I will remark that I have had two invoices of wool sold in England at the same price, in the same place, and within three days of each other, whose value in this country differed ten cents per pound on the day of their purchase, or any other day since. The one kind answered the market, the other did not, but was greatly superior in fineness of fibre.

My own clip of wool, grown upon my own lands, and cut last June and which I know all about, I shipped to England in one vessel, and consigned it, in two equal quantities, of equal quality, to two different markets, about 200 miles distant from each other, and they

were sold near the same time, by direction of the same house, and after full and fair exposure in both markets, at a difference of more than seven cents per pound in price. Its quality and condition were very superior, and just suited to the one market, and not to the other.

Within the past year, I have sent more or less wool to every part of England, and to Wales, and to Scotland, comprising the various qualities grown in Illinois, Michigan, Ohio, Pennsylvania, New York and Vermont. Nearly every invoice was accompanied with an intimation that "it was not sent so much with a view to profit as to try their market, and hoping to receive in return suitable directions or suggestions for a better method for preparing and shipping such wools to England." The result has been a voluminous correspondence, giving ample details, and all the particulars required. It is from this correspondence and the results of those actual sales, as well as from personal observation and information, that I venture the opinions already expressed. I trust that the past errors may be avoided in the future: and I now have done with the preparations and shipment.

The production of wool in the United States, until recently, has not equalled the consumption, but the low price of grains and provisions since 1840, has caused a rapid increase in the number of sheep,—which, under very favorable circumstances, may double each three years—and they now surpass, and are likely still further to surpass, all previous estimates. The quantity of wool became so unweildly last year, that the value fell full twenty per cent., notwithstanding the foreign shipments, the abundance of money, the high Tariff, and the prosperous condition of the manufacturing interest. We now have the promise of considerably increased quantities in this year's clip, especially from some of the new States, with money more in demand, the protective policy in more danger, and lower prices of cloths. If the Home markets were solely relied upon, wool, like all other articles, when produced in excess, would long rule low in price. An abundant supply will hereafter enable manufacturers to purchase at their leisure, and to choose their qualities; and henceforth prices must be regulated, like those of cotton, in the open markets of the world. The growing of wool in this country is receiving from year to year more and more attention. Men's minds have been turned in that direction. Hundreds of thousands of sheep, instead of being slaughtered as formerly, are now annually driven from older and cultivated lands, as fast as their increase exceeds their pasturage, to newer grounds, where they are distributed to emigrants from the older States accustomed to take care of them, and there they form the germs of other flocks growing up in millions. An impetus has thus been given which must long continue, because consistent with the interests of those concerned. The room and the inducements are sufficient. In the North-West, between the Alleghany and the Rocky Mountains, we have a vast region stretching over the extent of empires,

where the soil is composed mostly of vegetable mould, the accumulating deposit of various herbage from year to year since the Creation. The earth contains nothing approaching it in vastness and fertility. This deposit is a mine of material which may be turned into wheat, only by planting wheat upon it, or into wool only by pasturing sheep upon it. It lies open to every hand that will par take of it. Its position is secure from the desolation of wars. Its extent and quantity are such that it must pass to other generations of men before exhausted. But like all great tracts of interior territory, the transportation of its products to the ocean, and the markets of other climates, is laborious, costly, slow, hazardous and uncertain. Wool forms the only exception. Wool, which is worth ten times as much as iron of equal weight, may be sent forward from the place of its growth thirty times cheaper than wheat of equal value. The necessaries of densely peopled countries insures its steady consumption. Of all the articles of commerce wool is the most stable in its nature, and has always been the most generally used by civilized man, from times the most remote of every nation, tongue and race. Of all the staple artices of the world, wool requires the least labor to produce it. the least care and cost in its preservation and transportation, and is the most suitable, profitable and reliable production for the great interior of this country, where labor is scarce and dear, and fertile lands cheap and plenty. Hence its growth will long continue to be a cherished interest, and the export demand, at the prices of other countries, will last forever.

I remain, yours truly,

HAMILTON GAY.

WATER PROOF PAPER.

A method of manufacturing water proof paper has recently been discovered in France, by subjecting the pulp to the combined action of certain chemical solutions. The Iron City says: The rags are first cut into pieces, as usual, and boiled in water for ten or twelve hours, the pulp is then submitted to the heating engine, and then placed in a vessel containing a solution of lime, in the proportion of 32 lbs. of lime to 200 lbs. of pulp, a sufficient quantity of water to form a bath for it. To the solution another is added, made by dissolving 3 lbs. of soda in hot water. The solution and pulp are to be well mixed, heated by steam and other means, and allowed to rest for some time. The pulp is then taken out. Four pounds of psylium are now dissolved in hot water and the liquid strained through a seive, 50 lbs. of soap, made from resin, or other inodorous fatty matter, (or oils may be used in their natural state,) are dissolved in the liquid, and water added to make a bath for 200 lbs. of pulp.

The solution is then divided into parts by measures and the pulp having had the water drained from it, without pressure, is immersed in one part for three or four hours, the whole being well macerated in the mean time, and the temperature kept up by steam or otherwise, when the pulp is well strained. A solution of sulphate of alumina is now made by dissolving 20 lbs. of sulphate of alumina in as much water as will form a bath, and the pulp is immersed in half of the solution for about two hours, kept at a suitable heat. The pulp is well drained and immersed in the other half of the solution of pyslium and soap, and then removed to the other half of the solution composed of sulphate of alumina. The pulp may now be conveyed to the engine; where the heating is completed; when it is ready for sizing. [*Far. & Mech.*

MUTTON.

We mean to repeat at least a thousand times, or till what we say has some effect upon our countrymen, that a pound of lean, tender, juicy mutton, can be raised for half the cost of the same quantity of fat pork; that it is infinitely healthier food, especially in the summer season; is more agreeable to the palate when one gets accustomed to it; and that those who eat it become more muscular, and can do more work with greater ease to themselves than those who eat fat pork. We know nothing more delicate than smoked mutton hans of Southdown breed of sheep—venison itself is not superior. Sheep can be kept in fine growing order, where other domestic animals will scarcely exist, and thousands of acres in the State, under an enlightened system of sheep husbandry, may be made to pay a good interest, where now they are nearly dead property in the hands of their present owners. [*Amer. Agricul.*

TO PRESERVE PEAS AND BEANS.

To preserve these nutritious and excellent vegetables through the winter as sweet and succulent as when picked from the vines, can be accomplished by plucking them when green, and putting them in vessels filled with a weak solution of sugar, and boiling moderately for ten or twelve minutes, and removing them to an oven moderately warm, where they should remain till perfectly dry. They are then to be bottled and corked tight. In this way they may be preserved for any length of time, and are said to be as sweet in mid-winter, or early spring, as when first taken from the vines.

Genesee Farmer.

Pressing ground in which onion or other light seeds are planted, with a roller or board, adds greatly to insure their growth, and increase the crop.

AMERICAN PRODUCE IN ENGLAND.

As the demand for articles of our manufacture or growth is extended, it will, we trust, be found that our ability to satisfy the demand, is also increased. With a great variety of climate, and vast extent of territory—with our industry and skill and free institutions, who shall limit, under Providence, the amount to which we are able to feed and to clothe the world? The following extract is from a letter in the *Boston Traveller*, dated London, April 3rd, 1846.

Editor of the Far. Cab.

Within two or three years a great many articles of food, the produce of the U. States, have been sent to England in large quantities, and they have commanded good prices. American cheese, when it was first introduced here, was not esteemed, and only the poorer classes would perchase it, the quality was so ordinary; but now the leading cheese mongers always have a large supply of American cheese, and take care to inform the public of its superior quality.—*Indian corn* is another article of food that is just now talked about, and great efforts are making to introduce the bread made from wheat flour and indian meal, not only amongst the Irish people, but in the United Kingdom. It is coming rapidly into favour in all the large towns. Dr. Thompson recently read an able paper at a meeting of the Glasgow Philosophical Society, on the nutritive qualities of Indian corn, which he ranked very high, and said it made "an agreeable article of diet."

The luxuries, too, of the U. States, have made their appearance in the metropolis of England. To say nothing of the great value of American ice, and its extensive use by the nobility and gentry, the tables of the West End aristocracy can now be supplied with canvass-back ducks, wild turkeys and venison! The "*American Ice Company*" recently astonished the epicures of the clubs by the following announcements: "*American Forest Venison.* A few saddles, of very superior quality, in fine condition, just received by the American Ice Company, 106 New Bond street." Again: "*Wild Turkeys*, from the American forest, domesticated turkeys, wild geese from the American lakes, mongrel geese, and a superior lot of capons, just received in fine order, at 106 New Bond st." Here is another announcement, and it is probably the first of the kind that ever appeared in a foreign newspaper: "*Canvass black ducks*, from Chesapeake bay. A very fine lot of this celebrated water-fowl, just received from America, in excellent preservation, for sale by the American Ice Company, 106 New Bond street."

The American Ice trade must prove exceedingly profitable the present season, as the remarkably mild winter here prevented any of the traders in ice from securing any stock. During the spring and summer months American ice will be in great demand. It is sold at ten shillings sterling the cwt., or at two pence per pound at retail. A warehouse has been prepared at the St.

Katharine's dock, in a cool place, and effectually protected from the sun and heat, expressly from the storage of American ice, and where it can be immediately deposited on being cleared from the vessel, and remain till the owners remove it to their own warehouses. The Londoners are just beginning to appreciate American ice, and large quantities can readily be sold here at high prices.

☞ The next vessel ought to carry out a number of "Tudor's Ice refrigerators."

STEVENS' GRAIN CLEANER.

This is a new invention, the novelties of which, are, that the operations of chaffing and screening are entirely independent of each other, the chaffing being done by a strong blast of wind, without the aid of riddles or screen, the fan or blower is situated in the lower part of the machine, and by a turn in the aperture through which the wind passes, it is made to act upon the grain twice, thereby instantly effecting a thorough separation. The grain then passes through a revolving screen which completes the operation. The hopper is formed by the necessary arrangement of the case and machinery, and in the bottom, is situated a roller armed with spikes, which draws in the grain with rapidity and regularity. Upon one of the gudgeons of this roller, outside of the case, is fastened a wheel with a handle, which drives the fan and screen; the screen is made by winding the wire upon a strong frame and straining it perfectly tight, which keeps the spaces equal, as they are no cross wires to obstruct the grain, the operation is more effectual. The claims of superiority in this, are that it is more compact and durable than others, will clean much faster and better, and is not liable to get out of repair. The cost, says the inventor, will be about the same as those in common use. [*N, Y. Far. and Mech.*

ERRATA TO WIGG'S AGRICULTURAL ADDRESS.

Page 241, line 4, for "better" read *little*.
243 " 6, for "seed" read *weed*.
244 " 19, for "moral" read *normal*; line 32, for "much" read *well*; line 35 for "electoral" read *elective*.
245 " 8, for "His" read *This*.
246 " 20, for "inglorious" read *ingenious*.
247 " 28, for "Legislature and" read *Legislative aid*.
251 " 21, for "knew" read *know*; for "exemptive" read *exemption*.
252 " 13 from bottom, for "our negroes" read *one negro*.
253 " 16, for "artichokes" read *asparagus*; line 30, for "more only" read *only more*.
256 " 5, for "leaned" read *loaned*.
257 " 26, for "severe" read *severer*.

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TO OUR CORRESPONDENTS AND READERS.

We have been solicited to give a place in our Journal to an Address, delivered by W. H. Wigg, Esq. before the St. Luke's Agricultural Society, and call the attention of our readers to his very pungent remarks on the general subjects which it descants upon. We regret that some errors of importance have occurred in the Address, from the imperfect state of the manuscript; and which we endeavored to prevent, by sending the author a proof sheet, which was not returned to us in time; we have therefore inserted an Erratta at the end of the Number, much to our mortification.

The communication from our correspondent "Holkham" on the method of "*Applying Manures*" will be welcomed as the remarks of an experienced planter of the South—we thank him for his kind aid, and also for his approbation of our labours; nor can we refrain from quoting from his note his own flattering words: "Allow me to say, that I read your Journal with *unabated* interest, and feel sure of always finding something good in it."

As we have part of Mr. Poinsetts' Address in type for our next Number, we do not intend to delay its publication in our Journal any longer.

We call the attention of our subscribers to our accounts which we shall send round to those who are in arrears early in July.

TO OUR SUBSCRIBERS.

We shall continue to publish the names of those generous patrons, who pay us for the *Southern Agriculturist*, because we think they are supporting a work of public utility, and performing the part of patriots. In order to assist those at a distance who have not complied with our frequent calls, we insert a method by which we may get our dues through the Post-office. An order on the Postmaster in Charleston, will be thankfully received; the following is the form:

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